

Name: _____

at1118paper: Complete the Square (v412)

Example

By completing the square, find both solutions to the given equation:

$$x^2 - 52x = -480$$

Add $\left(\frac{-52}{2}\right)^2$, which equals 676, to both sides of the equation.

$$x^2 - 52x + 676 = 196$$

Factor the left side.

$$(x - 26)^2 = 196$$

Undo the squaring. We need to consider both $\pm\sqrt{196}$.

$$x - 26 = -14$$

or

$$x - 26 = 14$$

$$x = -40$$

or

$$x = -12$$

Question 1

By completing the square, find both solutions to the given equation:

$$x^2 - 32x = 105$$

Question 2

By completing the square, find both solutions to the given equation:

$$x^2 + 20x = 189$$

Question 3

By completing the square, find both solutions to the given equation:

$$x^2 + 6x = 216$$

Question 4

By completing the square, find both solutions to the given equation:

$$x^2 + 26x = -153$$

Question 5

By completing the square, find both solutions to the given equation:

$$x^2 - 56x = -780$$

Question 6

By completing the square, find both solutions to the given equation:

$$x^2 - 36x = -323$$